REMARKS

Claims 1-17 are pending in the application and have been rejected. Claims 1 and 12 have been amended to incorporate the limitations of Claim 2, which has been canceled. Claims 4 and 13 have been amended to recite the limitations of Claim 8, which has been canceled. Claims 15-17 have also been canceled.

Reconsideration and allowance of Claims 1, 3-6, and 9-14 in view of the above amendments and following remarks are respectfully requested.

The Rejection of Claims 15-17 Under 35 U.S.C. § 101

Claims 15-17 stand rejected under 35 U.S.C. § 101 as containing non-statutory language. Claims 15-17 have now been canceled and withdrawal of this rejection is requested.

The Rejection of Claims 1-14 Under 35 U.S.C. § 102(b)

Claims 1-14 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Keevill et al., U.S. Patent No. 6,359,938. Withdrawal of the rejection is requested for the following reasons.

Claim 1 is typical of the invention and, as amended, recites a method for analyzing an OFDM signal with an analyzing device having a signal section with a bandwidth smaller than the bandwidth of the OFDM signal. The OFDM signal transports a series of data symbols on several orthogonal carrier frequencies, with each data symbol having a useful part separated by a guard period from neighboring data symbols. The OFDM signal is analyzed by the steps of applying a low pass filter to the OFDM signal and shifting the spectrum of the OFDM signal in order to obtain a frequency shifted filtered OFDM signal, whereby the length of the impulse response of the low pass filter is shorter than 1/4 of the length of the guard periods of the data symbols.

The Examiner cites Keevill et al. as teaching a method for analyzing an OFDM signal with an analyzing device having a signal section with a bandwidth smaller than the bandwidth of

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the OFDM signal, the OFDM signal transporting a series of data symbols on several orthogonal carrier frequencies, each data symbol having a useful part separated by a guard period from neighboring data symbols, comprising the steps of low pass filtering of the OFDM signal with a low pass filter and shifting the spectrum of the OFDM signal in order to obtain a frequency shifted filtered OFDM signal, whereby the length of the impulse response of the low pass filter is shorter than the length of the guard periods of the data symbols. Applicant believes that the Examiner has misconstrued the Keevill et al. reference for the following reasons.

Initially, applicant submits that the Keevill et al. reference teaches a digital receiver for *receiving* OFDM signals, whereas the claimed invention describes methods for *analyzing* an OFDM signal and related devices. Thus, the teachings of Keevill et al. and the present invention are significantly different in nature.

With regard to the recited limitation of the claimed invention (e.g., in Claim 1) that the bandwidth of the signal section of the receiver have a smaller bandwidth than the OFDM signal, the Examiner has cited a passage from the Keevill et al. reference that does not recite this limitation. The cited passage from the Keevill et al. reference (Col. 4, line 48-Col. 5, line 3) neither mentions nor indicates the recited limitation. The cited section merely shows the general configuration of a receiver, including an amplifier, an analog digital converter, and an I/Q-demodulator, as well as the connection of the described elements. Thus, Keevill et al does not teach or suggest the bandwidth of the signal section of the receiver having a smaller bandwidth than the OFDM signal, as recited by the claimed invention.

Additionally, Keevill et al. does not teach the length of the impulse response on the low pass filter to be shorter than the length of the guard periods of the data symbols, as recited in the claimed invention. Particularly, the Keevill et al. reference does not show the length of the impulse response to be shorter than 1/4 of the length of the guard periods of the data symbols, as

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recited in independent Claims 1, 4, 12 and 13, as currently amended. The passage cited by the Examiner (Col. 22, lines 1-23) does not describe the relationship between the impulse response and guard period size. The cited passage describes the length of an integration buffer in a process further down the processing line than the low-pass filter recited by the present invention. The diagram illustrated in Figure 23 of the Keevill et al. reference illustrates this point. Referring now to Keevill et al. Figure 23, the data entered into the function block of the figure is "FFT DATA". Because the function block of Figure 23 has "FFT WINDOW" as an output signal, it calculates the FFT window position, which is a function only necessary long after any low-pass filtering of the OFDM signal. Therefore, FFT has already been performed when the integration using the aforementioned integration buffer 252 is executed. Comparing Figure 23 of the Keevill et al. reference to the claimed invention, it can be seen from Figure 2 of the application that the low-pass filter 24 occurs well before FFT 11, which is part of the W-LAN function block 7 (illustrated in more detail in Figure 1, including FFT 11). For the above reasons, the integration buffer 252 cannot be part of a low-pass filter applied to the OFDM signal. Furthermore, the storage block 256 is of length $T + G_{max}$, T being the sampling period and G_{max} being the maximal guard interval size. Because G_{max} is 1/4 T, the length of the storage block 256 is 1 1/4 T. Assuming the storage block 256 is an indicator of an impulse response length, that length would also be 1 1/4 T, and therefore far greater than the guard interval length.

Finally, regarding Claims 4 and 13 as presently amended, the Keevill et al. reference does not show a reduction of useful carrier frequencies transporting the pilot signal due to a reduced bandwidth of the signal section. Keevill et al. also does not show an averaging of the synchronization parameters over several data symbols. The Examiner has cited a portion of the Keevill et al. reference (Col. 27, lines 34-63) that describes some aspects of pilot signal

detection, including an algorithm for finding and storing pilot signals. The use of a reduced set of pilot signals, however, is neither mentioned nor implied. Additionally, averaging the signal over several symbols to compensate for a reduced set of pilot signals is neither mentioned in the Keevill et al. reference, nor implied.

The Keevill et al. reference neither anticipates, nor renders obvious, the claimed invention. Withdrawal of this rejection is respectfully requested for this reason.

CONCLUSION

In view of the above amendments and remarks, applicant believes that Claims 1, 3-6, and 9-14 are in condition for allowance. If any issues remain that may be expeditiously addressed in a telephone interview, the Examiner is encouraged to telephone applicant's attorney at 206.695.1698.

Respectfully submitted,

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